

(No Model.)

2 Sheets—Sheet 1.

A. J. STAGGS.
CHURN MOTOR.

No. 582,556.

Patented May 11, 1897.

Fig. 1.

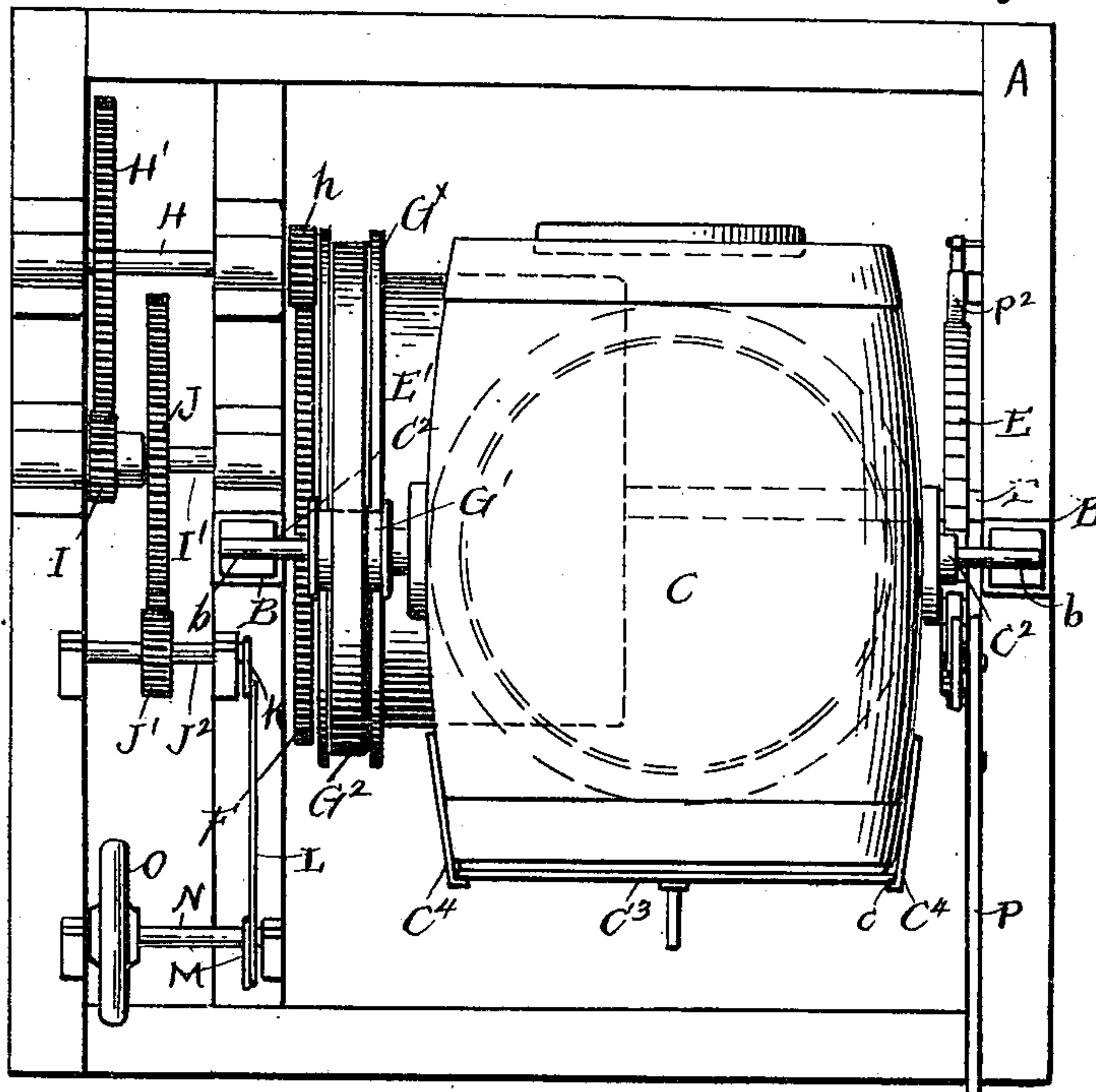


Fig. 6.

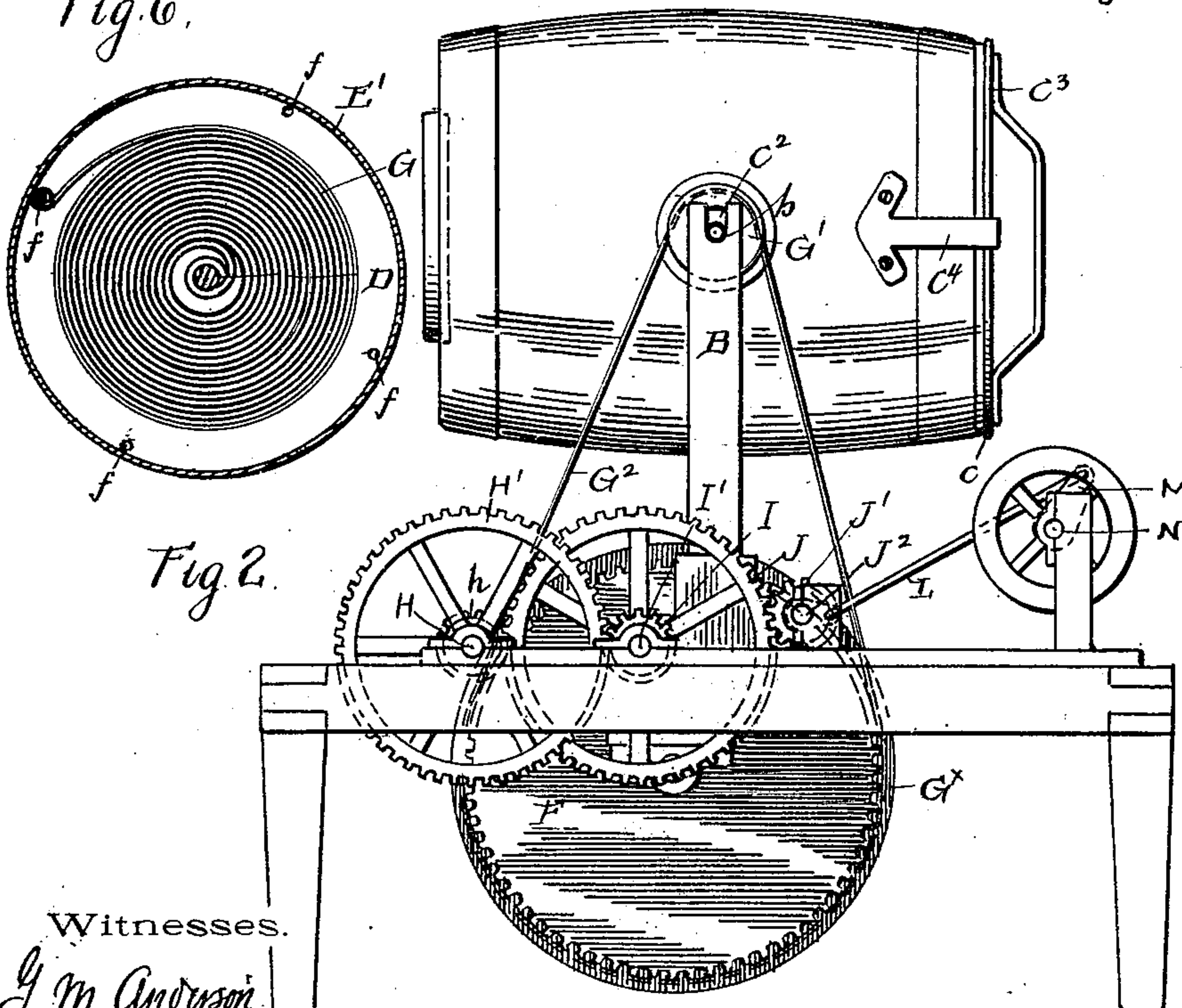


Fig. 2.

Witnesses.

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by
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his
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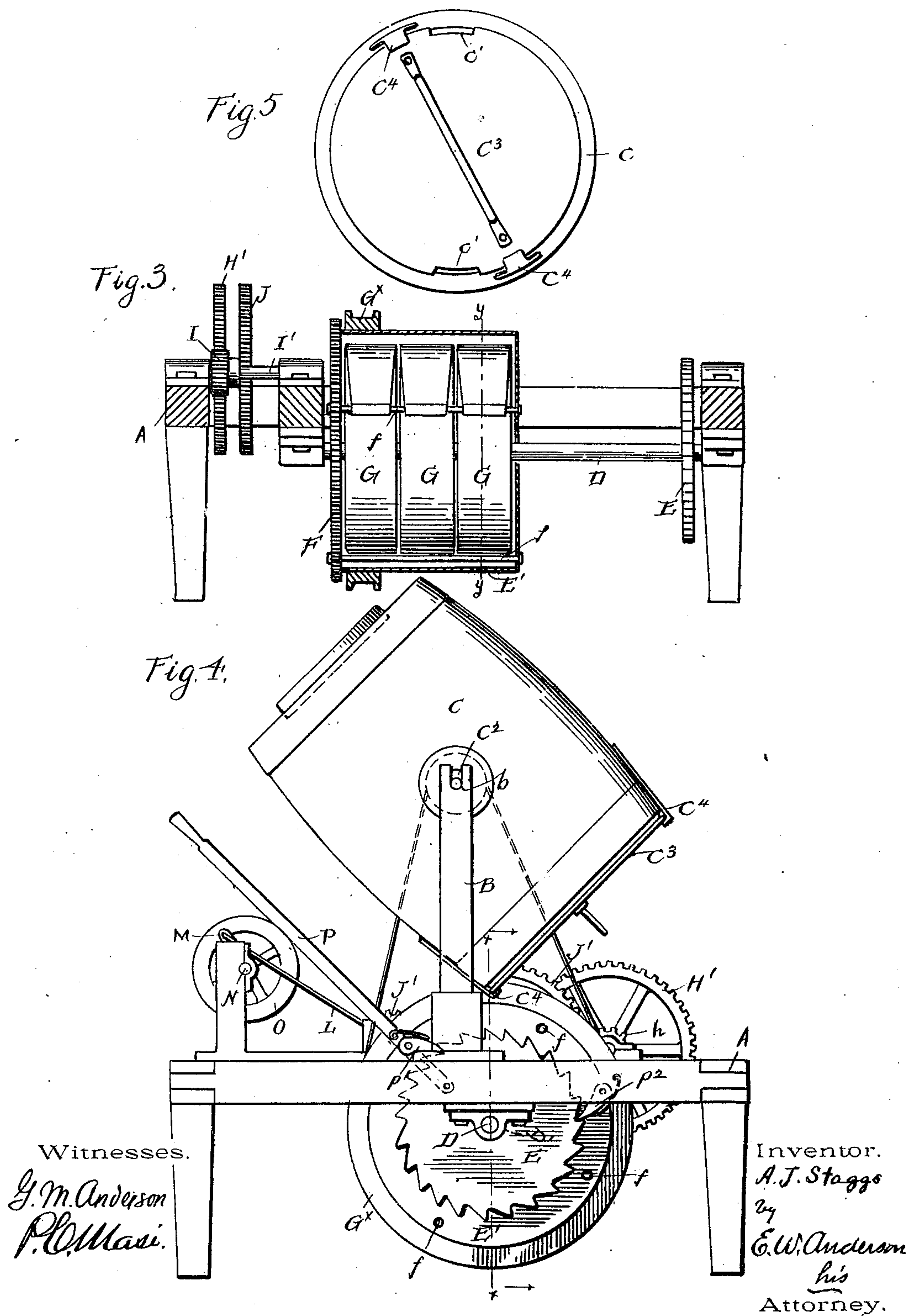
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UNITED STATES PATENT OFFICE.

ANDREW JACKSON STAGGS, OF PLAINVILLE, ILLINOIS.

CHURN-MOTOR.

SPECIFICATION forming part of Letters Patent No. 582,556, dated May 11, 1897.

Application filed June 24, 1896. Serial No. 596,821. (No model.)

To all whom it may concern:

Be it known that I, ANDREW JACKSON STAGGS, a citizen of the United States, and a resident of Plainville, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Churns and Churn-Powers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view of invention. Fig. 2 is a view of one side of same. Fig. 3 is a section on line $x x$, Fig. 4. Fig. 4 is a view of opposite side of invention from that shown in Fig. 2. Fig. 5 is a top plan view of churn-body. Fig. 6 is a section through hollow drum.

The object of this invention is to provide an improved churn and motor therefor; and it consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates a low supporting-frame having upright posts B, provided at their upper ends with open bearings b .

C designates the churn-body, which is of barrel form, and is provided at opposite points with trunnions C^2 , which project at right angles to the longitudinal axis of the said body and are adapted to rotate in the bearings b .

C^3 is the cover of the churn, which is removable and is made to fit in a liquid-tight manner. In the drawings said cover is shown as having a marginal flange c , having opposite notches c' , arranged to pass retaining-hooks C^4 , which are secured to the churn-body. The cover being placed in position and rotated sufficiently to carry the notches by these hooks cannot be removed until again brought into proper relation to said hooks. Any suitable fastening device or devices may, however, be employed to secure said cover.

D is a shaft which is journaled in bearings D' on the under side of the frame A.

E is a ratchet-wheel rigidly secured to said shaft at one end portion thereof.

E' is a large hollow drum which is loosely sleeved or journaled upon said shaft and which is provided at one end with a large gear-wheel F, which constitutes one head of the drum and which is connected to the opposite head by means of longitudinal tie-rods f , which are near the wall of the drum. Arranged side by side within the said drum and wound around the shaft D, to which their inner ends are connected, are a series of (in the present instance three) heavy springs G. The outer ends of said springs are secured to one of the tie-rods f . Upon said drum is a flanged band ring or rim G, which is arranged to drive a small pulley G' on one of the churn-trunnions by means of a belt G².

H is a short shaft which is journaled in the frame A and which has fast thereto a pinion h and a gear-wheel H'. The pinion h meshes with the large gear-wheel F, and the gear-wheel H' meshes with a small pinion I on a second parallel shaft I'. The shaft I' has a large gear-wheel J, which engages a pinion J' on a third shaft J², which is journaled forward of and somewhat above the shafts H and I'. On one end of this shaft J² is a wrist K, to which is connected one end of a pitman-rod L. The opposite end of said pitman-rod is connected to a crank-arm M of a rock-shaft N, on which is a balance-wheel O. This train of gear, which, it will be observed, is a multiplying-train, with the rock-shaft N and balance-wheel O, forms a governor for the churn as it is rotated by the spring-drum and insures a much steadier rotation thereof.

P is a lever which carries a spring ratchet-pawl P' in engagement with the ratchet-wheel E. By the operation of this lever the shaft D is actuated to wind the springs. P² is a spring-pawl which prevents backward rotation of the said shaft. In place of this ratchet-and-lever winding mechanism I may employ a crank, if preferred.

It will be observed that the springs can be wound while the churn is in operation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the rotary churn-barrel, of the main or winding shaft and means for actuating the same, the large hollow drum loosely mounted on said shaft and

having a gear-wheel fixed thereto, the heavy spring or springs connected at one end to the said shaft and at the opposite end to said drum, the band ring or rim on said drum, and
5 designed to be belted to a pulley on a journal or trunnion of the churn-body, the train of multiplying-gear arranged to be driven by said gear-wheel of the drum, a rock-shaft, a balance-wheel, and a pitman connecting an
10 arm of said rock-shaft with the wrist on the last shaft of the said train of multiplying-gear, substantially as specified.

2. The combination, in a churn-motor, of a winding-shaft, and means for actuating the
15 same, of a large drum loosely mounted on said shaft, a large gear-wheel forming one head of said drum, a series of heavy springs within said drum and connected thereto and to the winding-shaft, a band ring or rim on said
20 drum, a train of multiplying-gear arranged to be driven by said gear-wheel, a rock-shaft, a balance-wheel thereon, and a pitman con-

nection between the said rock-shaft and the said train of gear, substantially as specified.

3. The combination, in a churn-motor, of 25 the main shaft D, a large hollow drum loosely sleeved on said shaft, a large gear-wheel constituting one head of said drum, tie-rods which connect said wheel with the opposite head of the drum, one or more springs coiled 30 around said shaft, and secured at their outer ends to one of said tie-rods, a flanged band or belt G upon said drum, a rock-shaft N, carrying a balance-wheel O, a shaft J², a train of multiplying-gear between said shaft J² and 35 the large gear-wheel, and a pitman connecting said shaft J² with the said rock-shaft, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW JACKSON STAGGS.

Witnesses:

LYMAN MCCARL,
EVA FEIGENSPAN.